Philadelphia University
Faculty of Information Technology
Department of Software Engineering
Second Semester, 2015/2016

Course Syllabus	
Course Title: Research Project (2)	**Course code: 721449**
Course Level: 4	**Course prerequisite: 721448 Research Project (1)**
Lecture Time: 12:10- 13:00 **16:10-17:00**	**Credit hours: 2 hours**

Academic Staff Specifics

Name	Rank	Office No.	Office Hrs.	E-mail Address
Dr. Mohammad Taye	**Assistant Professor**	**309**	**-S-T-T** **11:00 -12:00** **12:00-13:00**	**mtaye@philadelphia.edu.jo**

Course Description
The project course consists of a two courses on which the student works over two semesters that can be extended. There are three deliverables: demonstration, discussion, and a written report.
A student works under the supervision of a member of staff, the course lecturer. Most of the projects groups involve three students working together on the same project; apart from these, all students do different projects.
The aims for the project work done in the fourth year are :to manage and execute a substantial project in a limited time, to identify and learn whatever new skills are needed to complete the project, to apply design and engineering skills in the accomplishment of a single task. In this context the skills mentioned may be in the general area of design and engineering in its broadest sense, or may be very specifically related to particular tools. A student works under the supervision of a member of staff, the Supervisor.

Course Objectives
The aims for the project course are:
1- To learn real project definition, analysis, design, implementation, testing, writing, and presenting
2- To manage and execute a substantial project in a limited time.
3- To identify and learn whatever new skills are needed to complete the project.
4- To apply design and engineering skills in the accomplishment of a single task.

Course Components
The lectures are on topics of particular interest to students doing a project in their final year: Overview of projects and project assessment, real project definition, analysis, design, implementation, testing, writing, and presenting (with demonstration), Career advice.

Text books

C. W. Dawson, The Essence of Computing Projects, A Student's Guide. ISBN 0-13-021972-X.

Teaching Methods
Duration: 16 weeks
Lectures: 7 lectures (7 hours), spread through the 16 weeks.

Learning Outcomes

On successful completion of these modules students will be able to:

- *Knowledge and understanding*
  - Real project leading process
  - Address a moderate sized problem and in so doing select and justify an appropriate approach, and follow the approach systematically. Recognize alternatives, selecting and justifying the approach taken at each point in the project and identify those parts of the project that are feasible within the time (etc.) constraints of the project.

- *Cognitive skills (thinking and analysis).*
  - Plan, execute and complete a significant design and, as appropriate, implementation within the time budget available
  - Demonstrate that students have acquired a degree of specialization in a particular part of the subject area, including enhanced or new technical skills that build on theory.
  - Demonstrate in the technical execution of the project the required level of analysis, design, and technical skill.
  - Recognise ethical issues that may arise when conducting research
- *Communication skills (personal and academic).*
  - Give a demonstration showing practical competence and demonstrating the results of the project
  - Document the project in a final report.
  - Communicate to both a technical audience in the written report and project demo and to a more general audience in the poster.

- *Practical and subject specific skills (Transferable Skills).*
  - Use the project Lecturers appropriately as project consultant or customer.

Project Classifications

Students may develop projects related to different Computing disciplines. They may add functionality to existing systems, or remove restrictions or generalize the way a system works, or automate manual processes, or combine functionality from different systems.

How to Choose a Project?

The list of projects for each semester will be available at the beginning of the semester. This list will contain the projects title and names of Lecturers. The main selection and allocation of students to projects was made at the beginning of the semester. It is possible for students to propose their own projects, in which case, they should prepare a proposal and give it to the Graduation Project Committee (GPC).

Usually each project is suitable for more than one student (normally 3 students). Therefore, groups of three students should be arranged by students themselves. Each group of three students should make three choices of projects on the selection form obtained from the GPC.

Students are strongly encouraged to see the associated members of staff for projects they are interested in, to find out more about the projects.

OWN Projects

If a student has successfully negotiated a project - outside the list of projects given by the department - with the project committee, and possibly a prospective lecturer, he/she still gives another 2 choices, and code choice number 1 as "OWN"; this is likely to be the student's first choice, but it does not have to be.

Project Timetable

You are expected to be in regular attendance working on your project. You must co-operate in maintaining regular contact with your lecturer. It is an attendance requirement that you see your lecturer every week during term time, and according to the Course Time table. The formal project deliverables are a demonstration with discussion, and a written report.

The project lifecycle should follow a sensible methodology and include the various stages identified in any Software Engineering course, and presented in the project course lectures. Work on the project itself, in particular use of equipment and computing facilities.

The Lecturer will announce a timetable for all project discussions, in parallel with the final written exam. The GPC forms a number of discussion committees, where each consists of at least one staff member (reviewer) and discusses one project document.

Project Assessment

The project evaluation is allocated as the following:

Project Supervisor: 65%
Project Reviewer : 35%

Demonstration

The demonstration is an informal presentation of the results of the project to the project lecturer. The students will say briefly, what the aims of the project are, and will then demonstrate the results for example by running the program or using the equipment constructed. The duration is about 20 minutes.

Report

The report is a formal written report on the project. This must be word processed. The report must follow a **set of standards**, given below, to facilitate its inclusion in the library and its usefulness for subsequent readers. Besides these, student will find it useful to follow the talk given on writing, which is given in the lecture.

Copies of previous graduation project reports are available for reference in the Department. Project documentation may be prepared on the PCs and printed on a laser printer. Students should hand in three soft cover copies of the report. After the document evaluation by the GPC, students should make all the correction that are suggested by the committee within the specified period of time under the supervision of their lecturer, then they should handed in three blue color hard cover copies of the project. The title of the project, the University, Faculty, Department names, and students' names are all written in golden color.

Guidance on Demonstrations

A demonstration lasts about 20 minutes. The group of students should aim to spend no more than 10 minutes summarizing what their project is designed to achieve and showing what it currently does achieve. The rest of the time is spent in answering questions.

Note: Students should not attempt to demonstrate on the computer every last thing their program can do. A demonstration of its basic operation plus one or two highlights should suffice.

The mark given for the demonstration is based on the quantity of the work attempted and the final state of achievement. Students should have their working documents to hand and appropriate reference material, design workings, reasonably up-to-date listings, examples, tests, etc. They are not giving a 20-minute seminar; at least half the time must be available for questions. Obviously, the kinds of things that are sensibly shown in a demonstration vary from project to project. If students are in doubt as to what to show, they should ask their lecturer. In general, students should be available and ready to start their demonstrations at least within one week of their submission of the project.

Report Standards

1. The report is a formal written account of the project, satisfying certain standards for inclusion in a library. Students must hand in all relevant work on the project by the end of the 14th week of the semester. In addition to the report, this includes a CD containing the source and code files of the project. It is important to meet this deadline. When students hand this to their lecturers it must be accompanied by a signed version of a form supplied by the GPC. Lecturer guidance should anyway be sought!

    - Introduction: Reporting the system concept of the project, the overall aim of the project, and the problem statement.
    - Domain Analysis: Reporting the details and the results of the domain analysis activity.
    - Application Analysis: Reporting the details and the results of the requirement analysis activity
    - System Design: Reporting the details and the results of the software architecture construction activity.
    - Detailed Design: Reporting the details and the results of the low level design activity.
    - Implementation: Reporting the details and the results of the project coding activity.
    - Testing: Reporting the details and the results of the project testing activity.
    - Conclusions (last chapter). What conclusions can students draw from the whole project? This should include a clear statement of what has been achieved overall, and will normally continue by suggesting areas of further related work, which could be done.

2. The report itself (apart from technical considerations) is worth 15% of the project mark. However, it forms the basis of an independent assessment of the project and therefore has greater effect than 15% in practice.

3. The report must be on paper of A4 size (210 x 297 mm). Only one side of paper should be used except in the Auxiliary Appendix.

4. The report must be produced using word processing facilities. The body of the report should be suitably divided into chapters and sections. Chapters, sections, pages, figures and appendices should all be numbered. Chapters, sections and appendices should have a heading. Each chapter should start on a new page. The body of the report should be preceded by a temporary title page, an abstract and a list of contents, and it should be followed by the references and then any appendices. References to other published work should follow the conventions used in giving references in published work. e.g.: [1] P.J. Denning. Human error and the search for blame. *Communications of the ACM* 33(1): pp 6-7, January 1990. The abstract page must give the title, author, and supervisor, as well as an abstract of the project.

5. Straightforward and peripheral aspects of the work done should be mentioned only briefly, and description and explanation concentrated on important and interesting aspects. No extra credit is gained by writing a long report and excessive length is detrimental. More detailed description should be placed in appendices to the report. The appendices and/or the Auxiliary Appendix should contain any further documentation. Only the report itself will be held in the Department. Therefore, where important material is not included in it, e.g. because it is not convenient to produce it in A4 format, or it would be too bulky, it may sometimes be appropriate to include extracts in the report.

Copyright

In general, it is an infringement of copyright to reproduce any material, except short acknowledged quotations, from a published book or journal without the written permission of the publisher.
Except for the copying of material that is clearly from internal documents of the Department, any copying of books, journals, or documents required for the report should be checked with the supervisor before it is carried out.

Any material that is copied **must** be acknowledged as such. Attempting to present material written by others as your own is plagiarism and a serious disciplinary offence, as described in the University guidelines in the Undergraduate Handbook.

Avoiding Plagiarism

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.
2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.
3. Direct quotations from an earlier piece of your own work, if not attributed, suggest that your work is original, when in fact it is not. The direct copying of one's own writings qualifies as plagiarism if the fact that the work has been or is to be presented elsewhere is not acknowledged.
4. Plagiarism is a serious offence and will always result in imposition of a penalty. In deciding upon the penalty the Department will take into account factors such as the year of study, the extent and proportion of the work that has been plagiarized, and the apparent intent of the student. The penalties that can be imposed range from a minimum of a zero mark for the work (without allowing resubmission) through caution to disciplinary measures (such as suspension or expulsion).

Expected workload

On average students need to spend 6 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy

Not contacting your Lecturer regularly is equivalent to absence from lectures which shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of faculty shall not be allowed to take the final exam of the project and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Course academic calendar

week	Basic and support material to be covered	Deliverables
(1)	Student seminars (presentation + debate)	Requirement Analysis & *software architecture*
(2)	***Revision**: Low level (detailed) Design* (1)	
(3)	***Revision**: Low level (detailed) Design* (2)	
(4)	***Revision**: Low level (detailed) Design* (3)	
(5)	Student seminars (presentation + debate)	Detailed design: report + models
(6)	***Revision**: Code Construction (1)*	
(7)	Exam	
(8)	***Revision**: Code Construction (2)*	
(9)	***Revision**: Testing techniques* (1)	
(10)	***Revision**: Testing techniques* (2)	Project code
(11)	Student seminars (presentation + debate)	Testing: report and results
(12)	***Lecture**: Writing Techniques* (1)	
(13)	Exam 2	
(14)	***Lecture**: Writing Techniques* (2)	
(15)	Final project reviews	Final Prototype Final project document
(16)	**Examination**	

Module references

Books

Title: The Unified Software Development Process
Author(s)/Editor(s): Jacobson, Booch and Rumbaugh
Publisher: Addison Wesley, 2003

Title: Object-Oriented Software Engineering: Using UML, Patterns, and Java
Author(s)/Editor(s): Bernd Bruegge, Allen Dutoit
Publisher: Prentice Hall, 2003

Title: Object-Oriented Modeling and Design with UML
Author(s)/Editor(s): Michael R. Blaha, James R Rumbaugh
Publisher: Prentice Hall, 2005